

REMARKS

Claims 1-5 and 18-29 remain pending in the application.

Withdrawal of the rejections under § 112 is noted with appreciation.

Notice is also made of the transition from Examiner Miller to Examiner Dastouri.

Applicants continue to maintain that no *prima facie* case of obviousness has been established as to any claim. Some of the reasons therefor are detailed in Applicants' earlier Amendment After Final, and are not reiterated here.

Moreover, even if a *prima facie* showing under § 103 had been established, it is submitted that the *Graham v. John Deere* factors objectively establish non-obviousness. (Evidence of commercial success and long-felt need must be considered by the Examiner under § 103. See MPEP § 716.01a.)

With this Response Applicants are submitting still more documentation evidencing the commercial success of the claimed technology – fulfilling a long felt need. These additional documents, objectively supporting a finding of non-obviousness, include:

- USENET posting with subject *HP Printers and Currency Anti-Copying Measures*, dated January 17, 2004 (Exhibit Z, 2 pages);
- Article from InformationWeek entitled *World Banks Working to Stop Counterfeiting*, dated March 9, 2004 (Exhibit Y, 2 pages);
- Article from CNET News entitled *Adobe, Others Slip Anticounterfeiting Code Into Apps*, dated January 9, 2004 (Exhibit X, 2 pages);
- Web press release from Bank of International Settlements entitled *Central Banks and Technology Industry Join to Combat Banknote Counterfeiting*, dated March 9, 2004 (Exhibit W, 2 pages);
- Web page entitled *About BIS*, www.bis.org/about/index.htm, dated June 2003 (Exhibit V, 1 page);
- Posting from www.adobeforums.com in thread entitled *No Wanoder Photoshop CS Seems Slow – It's Analyzing Images for Content!* by Kevin Connor, dated January 8, 2004 (Exhibit U, 2 pages);

- Web page entitled *Photoshop CS and CDS*, www.Adobe.com/products/photoshop/cds.html (Exhibit T, 1 page);
- Web page entitled *Stop, You Counterfeiter*, www.genecowan.com/blog/archives/001039.html, dated January 8, 2004 (Exhibit S, 2 pages).

(The undersigned represents that these enclosed documents – as well as the web printouts earlier submitted – are true and accurate copies of the documents they purport to be.)

The foregoing documents indicate that:

- Digimarc (*i.e.*, the assignee of the present application) created banknote anti-counterfeiting technology under contract to a group representing the national banks of the United States, the UK, Belgium, Canada, France, Germany, Italy, the Netherlands, Sweden, Switzerland, and Japan (Exhibit X);
- At the behest of those countries, this anti-counterfeiting technology has been deployed in image editing programs such as Adobe Photoshop and Jasc Paintshop Pro (Exhibit X; Exhibit U);
- This anti-counterfeiting technology is deployed in almost 90% of the printers available in March, 2004, including models of HP printers (Exhibit Y; Exhibit Z);
- Development of the technology was prompted by the threat of increasing use of personal computers and digital imaging tools in counterfeiting of banknotes, which is increasing exponentially (Exhibit W; Exhibit U);
- At least the new US \$20 bill, as well as various denominations of Euro banknotes, trigger the technology (Exhibit X; Exhibit U);
- The technology is said to be triggered by detection of a Digimarc watermark embedded in the details of the protected banknotes (Exhibit S).

As evidenced by the documents submitted herewith, and similar documents presented with earlier Responses, the anti-counterfeiting technology adopted in this massive, world-wide system, recognizes certain government-issued security documents (e.g., the new US \$20 bill)¹ and – in response – directs a web browser to a web site related to the document² (e.g., www.rulesforuse.org). From this web site the user can obtain information concerning reproduction of the document,³ guidelines for legitimate use of security document images,⁴ as well as information about counterfeiting and penalties.⁵ The security document is recognized by reference to a digital watermark encoded therein.⁶ The central banks plan to deploy this technology in scanner software later this year.⁷

The Examiner is requested to assess this objective evidence of non-obviousness, and consider same as regards the patentability of the pending claims. If the claims are still found to be unpatentable, a Notice of Appeal will follow, so that this unusually well-documented case of long felt need and commercial success can be considered by the Board.

Date: April 28, 2004

Customer Number 23735

Phone: 503-885-9699

FAX 503-885-9880

Respectfully submitted,

DIGIMARC CORPORATION

By 

William Y. Conwell
Registration No. 31,943

¹ Claims 1, 18, 24.
² Claims 1, 18.
³ Claim 18.
⁴ Claim 23.
⁵ Claim 19.
⁶ Claim 4.
⁷ Exhibit Y; Claim 26.

From: Richard M. Smith [mailto:rms@computerbytesman.com]=20
Sent: Saturday, January 17, 2004 12:10 PM
To: BUGTRAQ@SECURITYFOCUS.COM
→ Subject: HP printers and currency anti-copying measures

Hi,

Last week, the Associated Press reported that Adobe has incorporated anti-copying technology in their Photoshop CS software which prevents users from opening image files of U.S. and European currency. Here's the article:

Adobe admits to currency blocker

<http://tinyurl.com/2xnno>

=20

(<http://www.sanmateocountytimes.com/Stories/0,1413,87~11271~1882929,00.html>)

I did some investigating on my own computer and discovered that HP has also been shipping currency anti-copying software in their printer drives since at least the summer of 2002. I have an HP 130 photo printer and found the string "<http://www.rulesforuse.org>" embedded in the driver. =20

According to a few newsgroup messages posted in 2002 and 2003, folks are seeing this URL printed out when they attempt to print images of certain types of bills. An HP printer with this anti-copying technology only prints out an inch of a currency image before aborting the print job.

Here is a list of HP printers which appear to have this anti-copy technology embedded in their Windows printer drivers:

HP 130
HP 230
HP 7150
HP 7345
HP 7350
HP 7550

I suspect the list of affected HP printers is much longer.

I located these printer drivers simply by searching all files in my Windows and Program Files directories for the string "rulesforuse". If other folks run this same experiment, please let me know of other programs which appear to contain currency anti-copy technology.

There are some unanswered questions raised by this quiet effort by U.S. and European governments to turn home computers into anti-counterfeiting "cops":

1. Besides graphic programs and printer drivers, what other kinds of software is this currency anti-copy technology being embedded in?
2. Are companies being required to include currency anti-copying technology in their products? If not,=20

EXHIBIT Z

what incentives are being offered to companies to=20
include the technology on a voluntary basis?

3. Will future versions of this technology, "phone home" to the rulesforuse.org Web site with details about a violation of the currency copying rules? It would be very easy to include an email address, name of the image file, software version number, etc. embedded in a URL to the rulesforuse.org when a violation has been detected.

Richard M. Smith

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World Banks Working To Stop Counterfeiting March 9, 2004

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The major central banks confirmed that they've worked with software and hardware vendors to keep counterfeiters from being able to use PCs to make phony money.

By Alexander G. Higgins, Associated Press Writer

GENEVA (AP) — The world's major central banks confirmed Tuesday that they collaborated with leading hardware and software companies to keep personal computers from being used to make counterfeit money.

Work begun nearly four years ago by the so-called Group of Ten central banks resulted in the "counterfeit deterrence system," according to the statement from the Bank for International Settlements in Basel.

"Several leading personal computer hardware and software manufacturers have voluntarily adopted the system in recognition of the harm that counterfeit currency can cause their customers and the general public," said BIS, known as "the central bankers' central bank."

The BIS agreement became a source of public debate earlier this year when software maker Adobe admitted altering its Photoshop program to discourage counterfeiters. The issue has angered computer users who worry it will lead to censorship and future restrictions on other types of images, such as copyrighted or adult material.

An official familiar with the development of the technology said the system is based on special coding on bank notes, which currently is included only on major currencies.

Printer "drivers"—the software that makes printers work with PCs—recognize the code and refuse to print the complete image of a bill. That driver is included in almost 90 percent of the printers available today, said the official, who spoke on condition of anonymity.

Adobe, maker of the widely used graphics program Photoshop, acknowledged in January that it quietly added the technology to the software at the request of government regulators and international bankers.

Photoshop now refuses to display images of coded currency and advises the user to consult rules against copying bank notes, the official added.

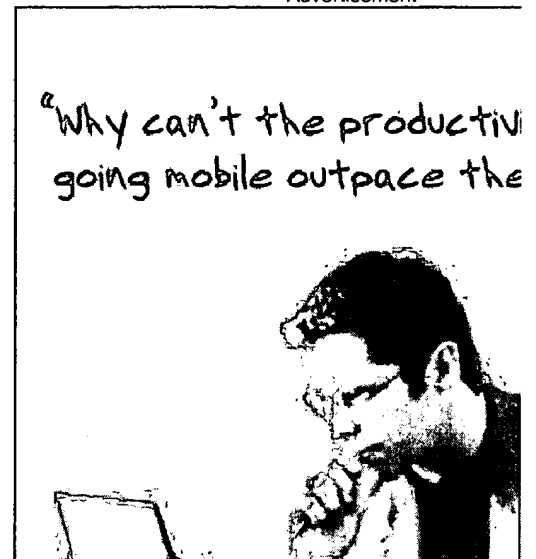


EXHIBIT Y

A third step that will be added later this year is software that will make scanners refuse to scan images of currency, the official said.

The bank statement said no one could use the technology to track the use of a personal computer or digital imaging tool.

"Consumers will not notice any difference in the performance or effectiveness of products equipped with this technology," it said.

The Group of 10 banks represent the world's largest economies. There are actually 11 countries in the group: the United States, Japan, Germany, Britain; France, Canada and Italy plus Switzerland, Sweden, Belgium and the Netherlands.

Altogether 27 central banks and note-printing authorities joined in the Central Bank Counterfeit Deterrence Group, the working group that developed the system, the BIS statement said.

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Enterprise software

Adobe, others slip anticounterfeiting code into apps

Last modified: January 9, 2004, 5:43 PM PST

By Robert Lemos
Staff Writer, CNET News.com

PRINT E-MAIL YOUR TAKE SAVE

Adobe and other makers of image-manipulation programs have, at the behest of a little-known group of national banks, inserted secret technology into their programs to foil counterfeiting, the companies acknowledged this week.

Photoshop and other programs will no longer be able to open files containing images of several nations' currencies, said Kevin Connor, director of product management for Adobe. The code to detect such images came from the Central Bank Counterfeit Deterrence Group, a low-profile association representing the national banks from Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States.

At the request of the group, Adobe and other software companies have inserted the functionality into their programs.

"This is a relatively new thing," Connor said. "We are not the first software application to do this, but we are probably the largest."

While Connor didn't know which currencies were protected by the technology, users of Adobe Photoshop CS and Jasc's Paintshop Pro have complained that files containing images of the new U.S. \$20 bill and several Euro denominations cannot be opened. Moreover, Connor stressed that the technology is already included in most color printers.

The creator of the technology, Digimarc, confirmed that it had produced the code under contract to the banking group, but wouldn't discuss any details.

"Due to the nature of the project, all the players and details are confidential," said Leslie Constans. Jasc, the maker of Paintshop Pro, couldn't be reached for comment.

Little information exists on the Central Bank Counterfeit Deterrence

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EXHIBIT X

Group (CBCDG).

The association was formed in 1993 by the governors of the G-10 central banks, according to the Bank of Canada's annual report. Originally called SSG-2, the group has mainly been given the task of developing a system to deter computer-based counterfeiting. In 2003, the United States gave \$2.9 million to the counterfeit-deterrence program, according to a report from the Federal Reserve. The Bank for International Settlements acts as the association's agent in contractual arrangements, according to information on the BIS's Web site.

The group could not be contacted for comment.

As early as 2000, the Central Bank Counterfeit Deterrence Group started approaching companies that made image manipulation programs as well as color printers, asking them to include anticounterfeiting technology in their products. In addition, the European Central Bank has requested that the Commission for European Communities create legislation that would make the inclusion of such technology mandatory.

In the United States, such technology goes beyond the requirements of the law. U.S. artists are able to scan and use the image of currency in their works as long as the image is less than 75 percent or greater than 150 percent of the dimensions of the original bill. Artists are also required to only make single-sided prints of the image and to destroy the digital copy when the work is done.

"The current implementation does not take into account your intent," said Adobe's Connor, who characterized the curtailing of artists rights as just "changing the source of where you would get the images."

Now artists will have to download images from a legal source, such as the U.S. Bureau of Printing and Engraving.

Yet, one poster to Adobe's forums found that even bank-provided images of currencies couldn't be opened. A collage of several denominations from a Swedish bank couldn't be opened.

"This is insane," the person wrote. "Nobody, and certainly not software I pay for, should have any say of what sort of image I am allowed to open."

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Central banks and technology industry join to combat banknote counterfeiting

9 March 2004

In response to the threat of increasing use of personal computers and digital imaging tools in counterfeiting banknotes, the Governors of the G10 central banks authorised in May 2000 the development by a group of central banks of a system to deter PC-based counterfeiting. At their meeting in March 2004, the Governors took note of important progress in this area.

The Central Bank Counterfeit Deterrence Group (CBCDG) has now developed the Counterfeit Deterrence System, consisting of anti-counterfeiting technologies which prevent personal computers and digital imaging tools from capturing or reproducing the image of a protected banknote.

Several leading personal computer hardware and software manufacturers have voluntarily adopted the system in recognition of the harm that counterfeit currency can cause their customers and the general public. The technology does not have the capacity to track the use of a personal computer or digital imaging tool and consumers will not notice any difference in the performance or effectiveness of products equipped with this technology.

Further information is available on the website www.rulesforuse.org, which has links to the regulations of various countries governing the reproduction of banknotes. In countries where the new technology restricts a user's ability to copy images of banknotes, the central bank (or the appropriate authority) will make available banknote images for reproduction in accordance with its requirements. The www.rulesforuse.org website directs users to the procedures and sources of banknote images for countries where they are available.

What is the CBCDG?

The CBCDG's mission is to investigate emerging threats to the security of banknotes and to propose solutions for implementation by issuing authorities. The CBCDG is a working group of 27 central banks and note printing authorities. Its Chairman is Mr Marc Salade, National Bank of Belgium. Ms Lorraine Laviolette, Bank of Canada, serves as the Project Director of CBCDG activities. The CBCDG meets annually at the Bank for International Settlements


Further Information

- ④ Next press release: [Financial sector foreign direct investment key to bringing emerging economies into global financial system, says CGFS](#) (30 Mar)
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(BIS) in Basel, where its secretariat is located.

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About BIS

June 2003

The Bank for International Settlements (BIS) is an international organisation which fosters international monetary and financial cooperation and serves as a bank for central banks.

The BIS fulfils this mandate by acting as:

- a forum to promote discussion and facilitate decision-making processes among central banks and within the international financial community
- a centre for economic and monetary research
- a prime counterparty for central banks in their financial transactions
- agent or trustee in connection with international financial operations

The head office is in Basel, Switzerland and there are two representative offices: in the Hong Kong Special Administrative Region of the People's Republic of China and in Mexico City.

Established on 17 May 1930, the BIS is the world's oldest international financial organisation.

As its customers are central banks, the BIS cannot accept deposits from, or provide financial services to, private individuals or corporate entities.

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EXHIBIT V.

Kevin Connor - 07:33pm Jan 8, 2004 Pacific (#269 of 1380)

As someone at Adobe who was involved in the decision to include counterfeit deterrence in Photoshop CS, let me finally provide you with a response to all of these concerns and questions. Sorry for the delay!:

Photoshop CS does indeed include a counterfeit deterrence system (CDS) to prevent the illegal duplication of banknotes. The CDS was created by a consortium of central banks from around the world. We, along with other hardware and software manufacturers, have included CDS in our products at their request to address the threat posed by the use of digital technologies in the counterfeiting of banknotes. There are other software products from other companies that already use this same technology. There are also hardware products that use the same or similar technology. For example, most color copiers sold today will not allow you to copy currency.

As digital imaging technology advances, becoming more broadly available and user friendly, the old barriers to currency reproduction are becoming less effective. The unscrupulous are taking advantage of the functionality that is being provided to the vast majority of honest users for the purposes of counterfeiting currency. In the US and around the world, counterfeiting through digital means is increasing exponentially, and retailers and the general public--including our own customers--are at risk.

Counterfeit currency is essentially a hot potato. Whoever holds it last, loses. The person who loses isn't necessarily the counterfeiter. There's no government body in place to "reimburse" people who, through no fault of their own, get paid with currency that turns out to be counterfeit. In our implementation of CDS, we've worked very hard to balance the need to protect these unsuspecting victims of counterfeiting along with the need to continue to provide a product that efficiently does what honest customers need it to do.

There appear to be several major concerns and objections repeated throughout this message thread, so I'll try to address each one individually:

1. Performance: CDS does not cause any noticeable slowdown in Photoshop performance. During most operations performed in Photoshop, CDS is not used at all. When it is used, the performance impact often is just a fraction of a second.

2. Legal use of notes: It is true that the current implementation of CDS will prevent you from scanning in your own banknotes even if your usage intent is entirely within legal boundaries. Regulations for using banknote images vary by country. It is the responsibility of the central bank in each country to provide images that can be used within the legal guidelines of that country. In other words, if you want to legally reproduce images of the new \$20US bills on a Web site or in a marketing brochure, you can contact the U.S. Bureau of Engraving and Printing for legal images that can be opened and manipulated in Photoshop CS. (You can visit them at www.moneyfactory.com.) Similar solutions should be available in other countries. If you find that your central bank is not providing adequate support to permit legal uses of their banknote images, then you should let them know.

3. Adobe's intentions: Please be assured that this implementation of CDS is not a step down the road towards Adobe becoming "Big Brother." We know that one of the reasons people love Photoshop is because it's an incredibly flexible tool that can be used for so many different things. That's also one of the reasons we at Adobe enjoy working on new versions. Finding ways to prevent you from doing things in Photoshop really doesn't interest us! Moreover, the CDS is not Adobe technology, but was provided by the central banks, who would have no reason to want to restrict anything other than bank notes. Counterfeiting is really a special case in which we could see how our own technology advances were making it easier to commit crimes and we were asked to implement a solution that would have minimal

EXHIBIT C

impact on honest customers. Yes, there is some impact, in that you need to contact your central bank for images, but our hope is that it's not a huge inconvenience for that small group of customers who do need to reproduce these images in their graphic design work. It also provides the central banks with an opportunity to better educate customers on exactly what is and isn't legal usage.

Of course, CDS in Photoshop CS is essentially a 1.0 implementation of a feature, analogous to the state of the layers palette in Photoshop 3.0. We realize that there may be room for improvement, particularly if there are corner usage cases that weren't taken into account in our current designs. We do want to hear about your concerns, and we definitely want to hear if there's a specific problem that this implementation has created for you. As with any Photoshop feature, we depend on hearing from customers so that we can make continual improvements release after release.

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Adobe Photoshop cs

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Photoshop CS and CDS

Adobe® Photoshop® CS software includes a counterfeit deterrence system (CDS) that prevents the use of the product to illegally duplicate banknotes. As implemented, CDS prevents users from opening detailed images of banknotes within Photoshop CS. The CDS technology was commissioned by the Central Bank Counterfeit Deterrence Group (CBCDG), a consortium of central banks from around the world. Adobe has included CDS in Photoshop CS at the request of the CBCDG.

Many countries allow the reproduction of their currency, subject to specific restrictions. For example, images of currency are often legitimately incorporated into advertising materials and fine art projects. Adobe incorporated CDS into Photoshop CS only after receiving assurance from the CBCDG that central banks, in countries that permit currency reproductions, would provide images of currency that can be used within the legal guidelines of those countries. Adobe is actively working with central banks to ensure that viable images will be available to our customers. CBCDG member central banks may be reached via links found at <http://www.rulesforuse.org>.

Users who are unable to locate suitable currency images from central banks should contact Adobe at photoshopcds@adobe.com. Adobe will forward all such inquiries to central banks in the appropriate regions.

EXHIBIT T

genecowan.com

Just as I thought

g-world

COWAN|creative

Just as I thought

A web log from the man who brought you "pissing" and "moaning"

« A new class of non-citizen | Main | Let's send him in the first rocket »

January 08, 2004

Stop, you counterfeiter

Isn't this an interesting example of making criminals of us all: the new version of Adobe Photoshop will not allow you to scan, open, or manipulate images of U.S. banknotes.

Using Photoshop CS to open **this publicly available image** of the \$20 bill (from the U.S. Treasury site) yields an alert:

This application does not support the unauthorized processing of banknote images.

For more information, select the information button below for Internet-based information on restrictions for copying and distributing banknote images or go to www.rulesforuse.org.

Doing exactly that takes you to the U.S. Secret Service website, which states:

The Counterfeit Detection Act of 1992, Public Law 102-550, in Section 411 of Title 31 of the Code of Federal Regulations, permits color illustrations of U.S. currency provided:

1. the illustration is of a size less than three-fourths or more than one and one-half, in linear dimension, of each part of the item illustrated;
2. the illustration is one-sided; and
3. all negatives, plates, positives, digitized storage medium, graphic files, magnetic medium, optical storage devices, and any other thing used in the making of the illustration that contain an image of the illustration or any part thereof are destroyed and/or deleted or erased after their final use.

So, in other words, the U.S. government says that I can use currency provided I follow those rules. But Adobe is enforcing a law that's all their own.

EXHIBIT S

April 2004

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Two things about this: first, this is yet another example of the hysteria that is making criminals of every consumer, from people who make copies of music to people who record television programs. Second, it's interesting that the program can recognize banknotes. I wonder if this has something to do with the recent redesign of U.S. currency? Is there something in the money that triggers this? Is this one of the "additional anti-counterfeiting measures" that have been kept secret? In fact, the Treasury website says: "Also, a machine-readable feature has been incorporated for the blind. It will facilitate development of convenient scanning devices that could identify the denomination of the note."

More on this knee-jerk nonsense on slashdot.

[via MetaFilter]

[More on this from CNet - Adobe speaks.]

Update: CNet reports that the technology behind this was developed by Digimarc, which explains how it works. Digimarc is the company that provides "watermarks" in images which can be decoded by a computer even if the image is cropped, scanned, or photocopied. The Digimarc plug-in has been embedded in Photoshop for some time now. Anyone can register with Digimarc, which then allows them to embed a serial number or code in their images using the plug-in. The code is embedded by use of a sort of 3D bar code that takes advantage of the detail in the image to make it invisible to the naked eye. It's pretty cool, actually. Anyway, this is what I figured the Treasury was using - a Digimarc watermark in the \$20 bill, embedded in the details.

Posted by Gene at January 8, 2004 04:31 PM | [TrackBack](#)

Comments

Oddly enough you can open the image and edit it in ImageReady CS which is packaged with Photoshop. Not just bizarre but inconsistent as well.

Posted by: **Tim** at January 9, 2004 09:02 PM

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Email Address:

URL:

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☐ Yes ☒ No

Comments:

I have a good excuse
A blast from her past
Tell your mommy
Is it safe?
Dirty Air
April Fool!
Fox: Words Not Needed
Perhaps I should sue
Radio for Kirk
Radio for the rest of us
These are broken

 I am Mr. Cowan, your host.

Do you really want to know?

 Cowan Cams

Backyard Weather

 Drop a Line

"gene at genecowan.com"
Send a mobile message
AIM/iChat: itsgenecowan

 Link-o-Rama

genecowan.com
g-world: a personal theme park
Jann Linder
The Island of Dr. Eric
Sara Hickman
National Council for the Social Studies

Sives
American Prospect
Ananova Quirkies
Annoying.com
AntiCoulter: Evil or Just Stupid?
Atrios
Body and Soul
Body and Soul
Boing Boing[updated]
Chironomicon
D.C. Metro Blog Map
Dave Prime's Journal
Dave Prime's Journal
David Sirota
DCRTV
Democratic Underground
digital flotsam
dogpoet
dollarshort.org
elf-reflection[updated]
FARK.com
futurefeedforward
Gawker
get off my lawn
Gizmodo
go fish[updated]